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BULGARIAN REPORT ON Q FEVER

Academician St. Angelov

Two diseases of different etiology, the virus disease influenza and the rickettsia disease Q fever, are so similar in epidemiology and symptomatology that a separate consideration of their individual aspects is necessary in order to enable us to differentiate between them.

Q fever appeared in Europe between 1939 and 1941. It was first noted in the Balkans (Bulgaria and eastern and southern Greece), where it affected German occupation troops and occurred in the form of an epidemic broncho-pneumonic disease resembling influenza. The disease was described by Immhaeuser, Kalk, and Frobesius under the name of "Balkan Grippe." Caminopetros of the Pasteur Institute at Athens succeeded in isolating the causative factor of the disease. Dingel determined that this causative factor was Rickettsia burneti. Dennig in 1947 identified the disease as Q fever. When the British occupied Greece in 1944, cases of the disease occurred among them. Caminopetros again established that the disease in question was Q fever.

Between 1943 and 1945, the disease affected American troops in Italy and also the indigenous population.

In the opinion of some investigators, Q fever (which was originally discovered in Queensland, Australia) was brought to the Mediterranean and Greece by Australian troops, and was spread into Bulgaria, Rumania, and Yugoslavia by German troops. On the other hand, Caminopetros expressed the opinion that the disease was indigenous to Greece, i. e., it had existed there before the arrival of Australian troops. Professor Meldolesi held the view that the disease was indigenous to Italy.

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According to Broesamlen, Q fever was observed in the USSR in 1942, with outbreaks occurring in southern USSR, particularly in the Crimea. On the basis of a personal communication made by [M. P.] Chumakov, the disease observed in the USSR was hemorrhagic fever rather than Q fever. Hemorrhagic fever is a disease caused by a virus. Its occurrence had been established by Chumakov elsewhere in the USSR as well.

In Switzerland, Q fever was described in the St. Galen district in 1937. It has occurred in many places in Germany. In 1947, 50,000 cases were recorded in Hessen. An epidemic of the disease, intermingled with influenza, spread south into Baden and Wuerttemberg. Bieling established that the disease was Q fever and called the attention of the government of Hessen to the danger which threatened the country.

Q fever has been recorded in every part of Europe except Scandinavia. In Europe, as in America, Australia, Asia, and Africa, Q fever is an indigenous, frequently occurring disease, which was originally mistaken for influenza. In view of the differences which exist between the rickettsiae that cause Q fever and other rickettsiae, and in view of the fact that Q fever is but one disease and is caused by the identical microorganism, Bergos proposed in 1948 that the names Rickettsia burneti for the causative factor of the Australian and European Q fever and Rickettsia diaporica for the causative factor of American Q fever be replaced with a single name, Coxiella burneti.

Q fever may be sporadic, endemic, or epidemic. The 1944-1945 epidemic in southern Italy reached Lake Garda in the north, crossed the frontier into eastern Switzerland in 1947, and spread to Wuerttemberg, southern Baden, and central Germany in 1948. This was a single pandemic without a separation into individual epidemics or the occurrence of intervals between individual epidemics.

Prof K. Chilov asserts with justification that it is very difficult and often impossible to distinguish between the clinical manifestations of Q fever and those of influenza caused by the A or B virus. Confusion with other diseases of the grippe type (e. g., primary atypical pneumonia) is also possible.

One of the characteristics distinguishing Q fever from virus influenza is that Q fever does not have the tendency to spread rapidly. Biological differentiation between virus pneumonia and Q fever can be achieved by the complement-fixation reaction carried out on a blood sample taken from the patient 14-21 days after the onset of the fever. The reaction of agglutination at a low temperature is negative in cases of Q fever, positive in cases of influenza. Guinea pigs or Syrian hamsters can be infected for diagnostic purposes. This must be done within one week after the patient's infection with the fever.

It has already been stated that Q fever occurred among German troops in Bulgaria during World War II, when it was observed in Europe in general. Among Bulgarians, Q fever was diagnosed for the first time by A. Mitov in 1949 in two cases at Plovdiv. Mitov's finding shows that Q fever has continued to exist in Bulgaria since 1944, appearing in sporadic cases or perhaps in an endemic form which was mistaken for virus influenza. Under the circumstances, one must assume that Q fever is indigenous to Bulgaria just as to Greece and Italy.

From the scientific and practical standpoints, it seemed of interest to investigate the occurrence of Q fever in Bulgaria and the interdependence between the Q fever affecting humans and the rickettsiosis caused by Coxiella burneti among domestic animals. The plan of scientific work for 1950 to be done by the Institute of Microbiology, Bulgarian Academy of Sciences, included

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the following projects: (1) "Investigation of Queensland Fever (Balkan Grippe) in Bulgaria," to be carried out by Prof St. Angelov, Academician; Prof K. Chilov, Corresponding Member, Bulgarian Academy of Sciences; Dr I. Kuyumdzhiyev; and Dr Panayotov. (2) "Investigation of Rickettsiosis of Domestic Animals, Particularly of Goats, in Relation to Human Q Fever in Bulgaria," to be carried out by Academician St. Angelov and Dr I Kuyumdzhiyev. The investigations on these two subjects were continued through 1950-1952. The serological method of complement fixation was applied in these investigations.

Within 3 years, 270 human-blood samples were examined in the entire country. Of these samples, 86 gave a positive reaction for Q fever, i.e., 31.8%. As far as the infection among animals was concerned, investigations were carried out at the Petrich and Panagyurishte okoliyas (districts) in locations where human Q fever had occurred. Out of 42 animal blood samples examined, 11 gave a positive reaction, i.e., 28.1%. In Petrich Okoliya, where Q fever was particularly prevalent, 8 blood samples out of 37 gave a positive reaction, i.e., 21.7%. It was also established that a farmer who drank the milk of an infected goat caught Q fever, that in another case a medical practitioner was infected, and that in a third case a clergyman who had consumed the milk of a sick cow was infected with Q fever. Thus, Q fever exists in Bulgaria among both humans and animals, and there is a definite connection between the human disease and the infection among animals.

In order to differentiate between Q fever and influenza pneumonia (which resembles it clinically) the First Clinic of Internal Diseases of the V. Chervenkov Medical Academy studied 102 cases of atypical bronchial pneumonia during the influenza epidemic of 1952. Serological investigation of the blood by means of the complement-fixation reaction showed that 21.5-22% of the patients had Q fever. This result demonstrated the parallel occurrence of the virus infection and the rickettsia disease during the same epidemic outbreak, a fact which has already been observed in many places in Europe and America. A discussion of this problem and a description of a rickettsial epidemic can be found in the article, "On the Balkan Grippe in Bulgaria," published by K. Chilov and Zografski in S'vremenna Meditsina.

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